South Texas Natives

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Photo by Forrest Smith

Native seeds are increasingly being used for landscape scale resotration projects like this natural gas pipeline right of way on King Ranch.

A Landscape Impact

By: Keith Pawelek

Over 41,000 pounds of seed was produced from native seed releases developed by *South Texas Natives* (*STN*) in 2014. When included in seed mixes this is enough seed to plant roughly 60,000 acres. STN is having a landscape impact, but exactly what does it take to get there? As just one example, sideoats grama, was initially evaluated in 2004. After about 4 years of evaluation, we moved into the seed increase stage, and by spring of 2012, we had enough seed to start the release process and initiate commercial production with a seed company. *STN* provided Douglass King Seed Company with 7.6 pounds of seed of the release, South Texas Germplasm sideoats grama. We required them to grow transplants for the initial seed field, and 5 acres of transplants were planted in the spring of 2012. Those 5 acres of sideoats grama produced 1,426 pounds of seed in 2012, and by the fall of 2013, over 4,000 pounds of seed was produced. This seed was then used to plant a 42 acre seed field of sideoats grama that same year. To date, over 18,000 pounds of South Texas Germplasm sideoats grama seed has been produced.

Through large scale commercialization of our releases like this, we have seen the cost of seed for restoration and reclamation purposes drop. In 2009, the average cost of a seed mix of locally adapted native seeds for South Texas was $160 per acre, 6 years later in 2015, average cost of a seed mix of locally adapted native seeds for South Texas is $82 per acre. Not only has our work dropped the average price per mix by 50%, the current seed mixes have more species, making them better suited to wildlife habitat restoration. In 2009, the average mix used in South Texas contained only 4 species, whereas in 2015, the average number of species per mix sold commercially was 14. Having the ability to include many species in one seed mix allows for better success over larger areas while using the same mix. This also allows for the natural cycles of succession to take place.

While great progress has been made, there is still more to be done. We are currently working on several new seed releases better suited for sandy soils, and are looking at more forbs that will provide an additional food source for wildlife, and pollinators. The Texas Department of Transportation has recently adopted new seeding specifications that use only native seeds on south Texas rural roadside seedings, thus requiring more seed and new species to aid in those projects. While the oil market has hit a slump and will likely reduce demand for seed from that industry, many of the infrastructure projects

that get products to market such as pipelines and gathering facilities are still being built. These needs are currently keeping the demand from this sector roughly the same. Additionally, wildlife focused landowners' are using seed of STN releases following brush removal and in habitat renovation projects. Demand indicates we are headed in the right direction and we are excited to continue working to meet it.

Keith Pawelek is the Assistant Director of South Texas Natives and Texas Native Seeds.

Bermudagrass conversion techniques to improve Bobwhite quail habitat

By: Tony Falk

Bermudagrass has been extensively used for turf, forage, and erosion control for a number of years. Bermudagrass has many traits that make it popular for use in improved pasture such as a high leaf to stem ratio, and ease of establishment by seed or vegetatively. However, it is because of these characteristics that Bermudagrass is likely to spread into unwanted areas. It is also difficult to convert land to something other than Bermuagrass should a change be desired once it is established.

Bermudagrass has been linked to a number of detrimental factors associated with bobwhite quail. Most notably is that stands of Bermudagrass reduce the number and variety of insects, limiting quail food availability. It has also been found to increase ground temperatures, and reduce bare ground making it too hot and difficult for quail to feed in Bermudagrass stands. Alternatively, diverse stands of native grass have a high diversity of insects, more open ground, and bunch grasses with suitable structure for quail nesting and foraging. The detrimental effects of Bermudagrass and declining quail populations, have led to an increase in the number of landowners interested in converting Bermudagrass to natives. *South Texas Natives* is collaborating with Texas Agrilife Research and Tarleton State University on a Bermudagrass control and native vegetation restoration research project funded by Texas Parks and Wildlife Department.

The project is set up to have 3 different stages. The first stage involved testing 4 common treatments to remove Bermudagrass. The second stage will involve native seeding using 3 different techniques, coupled with 2 different seed mixes. The final stage will incorporate several post-seeding management techniques. The experiment is being conducted in 4 ecoregions including the Coastal Prairies, Cross Timbers, Blackland Prairie, and Post Oak Savannah. The project began this fall with the application of herbicides to plots at each location. Beginning in the summer of 2016 plots will receive additional hebicide applications or combinations of other control methods. The final Bermudagrass removal technique which will be implemented fall of 2015 and 2016 will be plantings of a cool season cover crop to attempt to shade out Bermudagrass. These removal techniques were chosen because past research has shown that they may be effective at controlling Bermudagrass.

In 2017 3 different seeding

Photo by Forrest Smith

This 350 acre restoration planting in Atascosa County was done by the Matthews Ranch with the assistance of the USDA Natural Resources Conseration Service and STN

techniques 1) no-till drill, 2) disk and drill, and 3) disk and broadcast) and 2 different seed mixes (1) locally adapted including early successional species, and 2) standard mix of climax species) will be implemented. Then, 2 post seeding management techniques, mob grazing and shredding, will follow. Vegetation will be monitored through the fall of 2018.

Possible outcomes from this project include best management practices for the removal of Bermudagrass, refinement of native vegetation seeding techniques, and regional seed mix recommendations. We will also be tracking expenses throughout the project to allow us to give accurate management recommendations with the associated costs of each technique. The ultimate goal of the project is to develop cost effective ways to remove Bermudagrass and establish native vegetation to improve quail habitat.

Tony Falk is the research corrdinator for South Texas Natives and Texas Native Seeds.

Photo by Tony Falk

Throughout Texas there is a need for proven techniques to convert bermudagrass pastures back to native grasslands to provide habitat for bobwhite quail

15 years and counting, and thanks where it is due

By: Forrest Smith

South Texas Natives turns 15 next year, and it has been a great 15 years. We should all proudly look back and salute the accomplishment of the program, most notable of which I think, is that native plants and the use of native seeds is on the table in most every land management discussion that takes place in South Texas. Compared to the mindsets we often faced in 2001, this is a *huge* change and one we can proudly say we played a role in. We have often and rightly celebrated the program's seed releases, amazing partnerships, steadfast sponsors, and restoration projects. We have a lot to be thankful and proud of still from each those standpoints.

In these words though, I want to celebrate something else that makes STN great. That something is the staff of STN that gets up every day and makes STN, STN. Over the years, I have learned about native plant conservation efforts and seed source development initiatives from Kuwait to Colorado, and Montana to Mexico. The staff and student technicians of this program do what they do better than anyone, and they understand our mission, believe in it, and take ownership of it like few elsewhere do.

We have versatile and determined employees who can drive a tractor for breakfast, field a call from a reporter for brunch, negotiate an academic bureaucracy for lunch, sweat over a sampling frame in sweltering heat for an afternoon snack, and clean up and put on world-class seminar for a conservation group for dinner.

We have staff that have worked for us for over a decade, and who are paid far less than they could make elsewhere, because success to them means having an impact, and the satisfaction of doing something that will outlast them, and that they believe in.

We have students, both past and present, whose careers may have been shaped by working with STN, but who we know today are shaping the fields and agencies they went on to work for, because that is the quality of individuals they are. Many students who spent their summers helping STN continue to have a lot to do with the success in the real world that STN has enjoyed.

A list of names of those who have graced our lineup card and contributed mightily to STN is a really long one, and I'll refrain from even

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Photo by Forrest Smith

STN Staff members Tony Falk (l) and Keith Pawelek (r) collecting data on a restoration planting in Maverick County.

trying to present that here. But I do hope you will join me in collectively thanking and appreciating each of them for a job well done, and for the many important contributions they have made. A lot of backbreaking, challenging, and innovative work has been needed to accomplish what we have, and it's important we salute those who do it.

STN is about native plants, but today, and every day, it is also undeniably underpinned by hard-working men and woman who show a dedication to a cause, a determination to succeed, and who are due our thanks and praise. We would not be here without them.

Forrest Smith is the Dan L Duncan Endowed Director of South Texas Natives and Texas Native Seeds.

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